

## CLAIMS

- 1    1.    A computer system comprising:  
2        at least one processor;  
3        a memory coupled to the at least one processor;  
4        a plurality of logical partitions defined on the computer system;  
5        a persistent resource database residing in the memory; and  
6        a resource detection mechanism residing in the memory and executed by the at  
7    least one processor, the resource detection mechanism detecting a selected resource in the  
8    computer system and generating an update to the persistent resource database that  
9    indicates which of the plurality of logical partitions owns the selected resource.
- 1    2.    The computer system of claim 1 wherein the selected resource is a hardware  
2    resource.
- 1    3.    The computer system of claim 1 wherein the selected resource is a software  
2    resource.
- 1    4.    The computer system of claim 1 wherein the resource detection mechanism  
2    determines from the resource database a set of required resources owned by a selected  
3    logical partition.
- 1    5.    The computer system of claim 4 wherein the resource detection mechanism  
2    detects each resource as the resource is initialized.

1     6.     The computer system of claim 5 wherein the resource detection mechanism starts  
2     the selected logical partition when all required resources owned by the selected logical  
3     partition have been detected.

1     7.     An apparatus comprising:  
2             at least one processor;  
3             a memory coupled to the at least one processor;  
4             a plurality of logical partitions defined on the apparatus;  
5             a persistent resource database residing in the memory, the resource database  
6 including a list of resources owned by each of the plurality of logical partitions, where the  
7 resources were detected in previous power on cycles of the apparatus; and  
8             a resource detection mechanism residing in the memory and executed by the at  
9 least one processor, the resource detection mechanism determining from the resource  
10 database a set of required resources owned by a selected logical partition, detecting each  
11 resource as the resource is initialized, and starting the selected logical partition when all  
12 required resources owned by the selected logical partition have been detected.

1     8.     The apparatus of claim 7 wherein the resources include at least one hardware  
2 resource.

1     9.     The apparatus of claim 7 wherein the resources include at least one software  
2 resource.

1     10.    The apparatus of claim 7 wherein the resource detection mechanism detects when  
2 at least one required resource for the selected logical partition is not powered up, and  
3 initiates power up of the at least one required resource that is not powered up.

1     11.    The apparatus of claim 7 wherein the resource detection mechanism initiates  
2 power off of a plurality of resources owned by the selected logical partition in response to  
3 the selected logical partition being powered off.

1 12. An apparatus comprising:  
2 at least one processor;  
3 a memory coupled to the at least one processor;  
4 a plurality of logical partitions defined on the apparatus;  
5 a persistent resource database residing in the memory, the resource database  
6 including a list of resources owned by each of the plurality of logical partitions, where the  
7 resources were detected in previous power on cycles of the apparatus; and  
8 a resource detection mechanism residing in the memory and executed by the at  
9 least one processor, the resource detection mechanism determining from the resource  
10 database a set of required resources owned by a selected logical partition, detecting each  
11 resource as the resource is initialized, and starting the selected logical partition when all  
12 required resources owned by the selected logical partition have been detected, the  
13 resource detection mechanism further detecting when at least one required resource for a  
14 selected logical partition is not powered up and initiating power up of the at least one  
15 required resource that is not powered up, the resource detection mechanism initiating  
16 power off of a plurality of resources owned by the selected logical partition in response to  
17 the selected logical partition being powered off.

1 13. The apparatus of claim 12 wherein the resources include at least one hardware  
2 resource.

1 14. The apparatus of claim 12 wherein the resources include at least one software  
2 resource.

1 15. A computer-implemented method for storing entries in a persistent resource  
2 database that correspond to resources in a logically partitioned computer system, the  
3 method comprising the steps of:  
4 (A) detecting a resource;  
5 (B) determining which of a plurality of logical partitions owns the detected  
6 resource; and  
7 (C) storing an entry in the persistent resource database that indicates the detection  
8 of the resource and that indicates which of the plurality of logical partitions owns the  
9 detected resource.

1 16. The method of claim 15 wherein the resource comprises a hardware resource.

1 17. The method of claim 15 wherein the resource comprises a software resource.

1 18. The method of claim 15 further comprising the steps of:  
2 powering off the logically partitioned computer system;  
3 powering on the logically partitioned computer system;  
4 detecting a resource;  
5 determining from the persistent resource database which of the plurality of logical  
6 partitions owns the detected resource.

1 19. The method of claim 18 wherein the step of detecting a resource is performed  
2 when the resource is initialized.

1 20. The method of claim 18 further comprising the step of starting the logical  
2 partition that owns the detected resource when all required resources owned by the logical  
3 partition have been detected.

1 21. A computer-implemented method for initializing a computer system that includes  
2 a plurality of logical partitions, the method comprising the steps of:  
3 storing in a persistent resource database a list of resources owned by each of the  
4 plurality of logical partitions during previous power on cycles of the computer system;  
5 determining from the resource database a set of required resources owned by a  
6 selected logical partition;  
7 detecting each resource as the resource is initialized; and  
8 starting the selected logical partition when all required resources owned by the  
9 selected logical partition have been detected.

1 22. The method of claim 21 wherein the resources include a hardware resource.

1 23. The method of claim 21 wherein the resources include a software resource.

1 24. The method of claim 21 further comprising the steps of:  
2 detecting when at least one required resource for a selected logical partition is not  
3 powered up; and  
4 initiating power up of the at least one required resource that is not powered up.

1 25. The method of claim 21 further comprising the step of initiating power off of a  
2 plurality of resources owned by the selected logical partition in response to the selected  
3 logical partition being powered off.

1 26. A computer-implemented method for initializing a computer system that includes  
2 a plurality of logical partitions, the method comprising the steps of:  
3 storing in a persistent resource database a list of resources owned by each of the  
4 plurality of logical partitions during previous power on cycles of the computer system;  
5 determining from the resource database a set of required resources owned by a  
6 selected logical partition;  
7 detecting each resource as the resource is initialized;  
8 starting the selected logical partition when all required resources owned by the  
9 selected logical partition have been detected;  
10 detecting when at least one required resource for a selected logical partition is not  
11 powered up;  
12 initiating power up of the at least one required resource that is not powered up;  
13 and  
14 initiating power off of a plurality of resources owned by the selected logical  
15 partition in response to the selected logical partition being powered off.

1 27. The method of claim 26 wherein the resources include a hardware resource.

1 28. The method of claim 26 wherein the resources include a software resource.

- 1 29. A program product comprising:  
2 (A) a resource detection mechanism that detects a selected resource in a computer  
3 system that includes a plurality of logical partitions, the resource detection mechanism  
4 generating an update to a persistent resource database that indicates which of the plurality  
5 of logical partitions owns the detected resource; and  
6 (B) computer readable signal bearing media bearing the resource detection  
7 mechanism.
- 1 30. The program product of claim 29 wherein the signal bearing media comprises  
2 recordable media.
- 1 31. The program product of claim 29 wherein the signal bearing media comprises  
2 transmission media.
- 1 32. The program product of claim 29 wherein the selected resource is a hardware  
2 resource.
- 1 33. The program product of claim 29 wherein the selected resource is a software  
2 resource.
- 1 34. The program product of claim 29 wherein the resource detection mechanism  
2 determines from the resource database a set of required resources owned by a selected  
3 logical partition.
- 1 35. The program product of claim 34 wherein the resource detection mechanism  
2 detects each resource as the resource is initialized.



1    36.    The program product of claim 35 wherein the resource detection mechanism starts  
2    the selected logical partition when all required resources owned by the selected logical  
3    partition have been detected.

- 1 37. A program product comprising:  
2 (A) a resource detection mechanism that determines from a persistent resource  
3 database in a computer system that includes a plurality of logical partition a set of  
4 required resources owned by a selected logical partition, the resource detection  
5 mechanism detecting each resource as the resource is initialized and starting the selected  
6 logical partition when all required resources owned by the selected logical partition have  
7 been detected; and  
8 (B) computer readable signal bearing media bearing the resource detection  
9 mechanism.
- 1 38. The program product of claim 37 wherein the signal bearing media comprises  
2 recordable media.
- 1 39. The program product of claim 37 wherein the signal bearing media comprises  
2 transmission media.
- 1 40. The program product of claim 37 wherein the resources include at least one  
2 hardware resource.
- 1 41. The program product of claim 37 wherein the resources include at least one  
2 software resource.
- 1 42. The program product of claim 37 wherein the resource detection mechanism  
2 detects when at least one required resource for the selected logical partition is not  
3 powered up, and initiates power up of the at least one required resource that is not  
4 powered up.

- 1 43. The program product of claim 37 wherein the resource detection mechanism
- 2 initiates power off of a plurality of resources owned by the selected logical partition in
- 3 response to the selected logical partition being powered off.

1     44.     A program product comprising:  
2             (A) a resource detection mechanism that determines from a resource database in a  
3 computer system that includes a plurality of logical partitions a set of required resources  
4 owned by a selected logical partition, the resource detection mechanism detecting each  
5 resource as the resource is initialized and starting the selected logical partition when all  
6 required resources owned by the selected logical partition have been detected, the  
7 resource detection mechanism further detecting when at least one required resource for a  
8 selected logical partition is not powered up and initiating power up of the at least one  
9 required resource that is not powered up, the resource detection mechanism initiating  
10 power off of a plurality of resources owned by the selected logical partition in response to  
11 the selected logical partition being powered off; and  
12             (B) computer readable signal bearing media bearing the resource detection  
13 mechanism.

1     45.     The program product of claim 44 wherein the signal bearing media comprises  
2 recordable media.

1     46.     The program product of claim 44 wherein the signal bearing media comprises  
2 transmission media.

1     47.     The program product of claim 44 wherein the resources include at least one  
2 hardware resource.

1     48.     The program product of claim 44 wherein the resources include at least one  
2 software resource.

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